

FSSC Implementation and Support of Proposed Changes to Observation Strategies

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Current Scheduling

- Current standard observations consist of:
 - Sky survey
 - Weekly observation of orbit pole
 - Less frequently - nadir observations
 - Occasional TOOs:
 - “TOO order” (no replan), or
 - Scheduled observation. Generally interleaved with sky survey.

Scheduling System

- The heart of the scheduling system is “Tako”.
- Tako was also used to make the timelines etc. for the changed strategy examples.
- The proposed changes blend:
 - sky survey
 - “optimized” pointing positions towards Galactic center with precession phase dependent positions.

Implementation of New Strategies

- Example timelines were already produced. They used a version of Tako that did not handle Earth Avoidance Angle in an easy way.
 - Reduced Tako software support, but some changes can still be made:
 - FSSC has modified Tako to deal with EAA more smoothly.
- Galactic center pointings:
 - Orbit precesses in rather predictable way. Anticipate that acceptable coordinates can be obtained by modifying existing perl script used to get weekly polar observations.

Evaluating impacts of changed strategy: `gtorbsim`

- The proposals received and accepted for Cycle 6 may have been written under the assumption that there would be no changes to the survey observations.
- Proposers may wish to evaluate effects of changed strategy.
- A key tool for evaluation is `gtorbsim`.
 - Generates spacecraft file using either timeline or using e.g. specified survey profile or pointing.
- `gtorbsim` could benefit from improvements.

Enhancing gtorbsim

- gtorbsim weaknesses:
 - documentation, user interface, bugs, doesn't easily support advanced strategies (e.g. mix of pointed/survey requires timeline)
- Original developer no longer in FSSC. However, we believe we can make improvements:
 - Update documentation (e.g. Julie's work)
 - Improve interface. Either directly modify code, or create a "wrapper" script.
 - Investigate bugs: fix code and/or auto-fix of output.
 - Easier support for advanced options: e.g. generate/modify timelines via script that can be used as input.